station's signal near the transmitter site of the undesired station correspondingly becomes much stronger and is receivable in the vicinity of the transmitter site of the undesired station, even in the presence of the strong interfering signal from that station.

Even though the existing allocation scheme predicts interference between second and third adjacent channel stations, substantial industry experience has shown that such interference is actually non-existent. A receiver in the presence of strong signals may exhibit interference which may be characterized as "blanketing" or receiver overload, which is a different phenomenon from second or third adjacent channel interference, and may be caused by stations at any frequency in the FM band. As described below, there has been testing and observation of potential interference between stations closely spaced on second and third adjacent channels and the results demonstrate no interference

Empirical Data Regarding Grandfathered Second And Third Adjacent Channel Stations.

MEMPHIS, TN. Two noncommercial educational FM stations, WUMR (formerly WSMS) on channel 219C2 and WKNO-FM on channel 216C1 received an experimental authorization

in 1989 to operate at transmitter site only 3.3 kilometers apart (File Numbers BPEX-881128ME - MF). Station WUMR operates with effective radiated power (ERP) of 25 kilowatts with antenna height above average terrain (HAAT) of 120 meters. WKNO-FM utilized ERP of 100 kilowatts and HAAT of 174 meters. Under 73.207 of the commercial FM rules, the required separation between these stations operating on third adjacent channel is 79 kilometers. After testing with the experimental facilities, which demonstrated that no interference occurred, the stations were granted licenses to so operate and have continued such operation to the present time. The chief engineer of WUMR, Eddy Arnold, in a telephone conversation on July 18, 1996, advised that since the beginning of the closely spaced operation of these stations to his knowledge, there has been no complaint of interference.

MIAMI, FL. Since May 1994, the State of Florida has operated an experimental FM broadcast station in Dade County (File Number BPEX-930513MA) The station was assigned call letters WAEM, and operates on channel 272 with ERP of 25 watts with HAAT of 100 meters. The transmitter site for WAEM is 20.4 kilometers from second upper adjacent channel station WMXJ Pompano Beach, FL, which operates on channel 274C with ERP of 100 kilowatts and HAAT of 307 meters. Tests performed by Kessler and

Gehman Associates, Inc., demonstrate that no interference results to the operation of WMXJ by the WAEM. A copy of the Kessler and Gehman report is annexed as Exhibit A.

GREENVILLE, SC. Another example of close spaced second adjacent channel stations, which coexist peacefully without mutual interference are WFBC Greenville, SC and WFNQ Forest City, NC. These stations are separated by 38.3 kilometers where 105 kilometers is the required separation. Station WFBC operates on channel 229C with ERP of 100 kilowatts and HAAT of 564 meters. WFNQ operates with ERP of 93 kilowatts and antenna height of 619 meters. There are no known complaints of interference with respect to these maximum or near maximum facility Class C stations.

WASHINGTON, DC. Station WHFS Annapolis, MD operates on channel 256B, and is 25.3 kilometers short spaced with WMZQ-FM Washington, DC on channel 254B and is also 35.0 kilometers short spaced with WGAY Washington, DC on 258B. The required separation for Class B stations operating two channels apart is 74 kilometers. There have been no complaints of interference regarding any of these short-spaced stations.

TIJUANA, MX. In Tijuana, Mexico, two stations, XETRA on channel 216C and XHTIM on channel 219B are but 4.3 kilometers apart, whereas FCC rules would require separation of 105 kilometers if they were domestic stations. Station XHRBN on channel 252A and XHMORE on 255B are 5.2 kilometers apart, where FCC rules would require separation of 69 kilometers for domestic stations. Station XHMORE on channel 255B is also short-spaced with XHKY on channel 257B1 at 3.8 kilometers. FCC rules would require such domestic stations to be 71 kilometers apart. Station XHKY on channel 257B1 is additionally only 32.9 kilometers from second upper adjacent channel station XHBCN on channel 259B1. U.S. stations with that frequency relationship would be required to be separated by 50 kilometers. All of these Mexican stations apparently operate in peaceful coexistence.

Finally, the FCC recognizes that interference between second and third adjacent channels is non existent. In paragraph 24 of the NPRM the Commission states, "A limited number of grandfathered stations existed between 1964 and 1987 with complete flexibility on second-adjacent-channel and third-adjacent-channel short-spacing and we did not receive complaints of second-adjacent-channel or third-adjacent-channel interference during that time."

Conclusion

Based on available evidence, no interference exists between short-spaced second and third adjacent channel stations. Accordingly, those grandfathered second and third adjacent channel stations which are currently short spaced, and which have remained so since 1964, should be given the opportunity to improve their facilities without regard to second or third adjacent channel short-spacing.

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du Treil, Lundin & Rackley, Inc.
240 N. Washington Boulevard
Suite 700
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July 19, 1996

Exhibit A

TOWNST SPW

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February 24, 1995

Mr. Larry D. Eads, Chief
Audio Services Division
Mass Media Bureau
Federal Communications Commission
Room 302
1919 M Street, NW
Washington, DC 20554

RE: Experimental Station WAEM (FM), Miami, FL
State of Florida, Department of Management Services
Division of Communications
BLEX-940331 KZ, BPEX-930513 MA

Dear Mr. Eads:

This is in response to your letter of January 27, 1995, to Mr. William Lindner, Secretary of Department of Management Services, Division of Communications, State of Florida (reference number 1800B3-BJB). Therein, you enquire into certain aspects of the operation and testing of experimental station WAEM (FM), Miami, Florida. This inquiry takes the form of seven (7) questions set out on page 3 of your letter. The response to these questions follows.

Q. 1. As a result of the operation of WAEM what data and information has been gathered to date that has not been submitted to the Commission for review?

A. 1. The data gathered to date is contained in the Declaration of Roy Pressman, and the Engineering Report of Kessler and Gehman Associates, Inc., attached as Exhibits Numbers 1 and 2 to this letter. These submissions address the data that has been gathered to date.

Q. 2. What data and information will be provided to the FCC as a result of the second-adjacent operation of WAEM and WMXJ (FM), Pompano Beach, FL?

A. 2. As demonstrated in the attached Declaration of Roy Pressman, and the Engineering Report of Kessler and Gehman Associates Inc., station WAEM, has received no interference complaints since it commenced operation in May of 1994. It can be received throughout its service

area without interference from Station WMXJ (FM). Station WMXJ (FM), can be received throughout the WAEM service area without interference from Station WAEM. Indeed, car radio tests show reception of Station WMXJ (FM), throughout Dade and Broward Counties without interference from Station WAEM.

Q. 3. What specific methods have been used to gather experimental data so that it is valuable technical information?

A. 3. The specific methods of gathering technical data are described in the attached Declaration of Roy Pressman, and the Engineering Report from Kessler and Gehman Associates, Inc.

Q. 4. Has the operation of WAEM caused any objectionable interference to WMXJ and, if so, what steps have been taken to eliminate such interference?

A. 4. The operation of Station WAEM has not caused objectionable interference to WMXJ, not even in the high rise apartment building where the likelihood of such interference was the highest.

Q. 5. When did the proposed experiments commence and what is the complete time table including when the FCC will receive the final report?

A. 5. Technical experiments on Station WAEM began in May of 1994, when the Station went on the air. From that time on, Mr Pressman has been conducting car radio tests on the station throughout Dade and Broward Counties. He also conducted testing in the high-rise apartment building where interference to Station WMXJ was most likely. The field test by Mr. William Kessler of Kessler and Gehman Associates, Inc. were conducted during the period of February 14, through February 17, 1995. With respect to technical experiments on the Station, the licensee is of the opinion that these tests prove that the station operates as predicted without interference to Station WMXJ, and requests that the Commission accept this as a final technical report on the experiment. With respect to the programing aspects of the experiment, Station WAEM began public safety programming on February 6, 1995. The licensee asks until May 18, 1996, to complete a report on the success of this tourist safety programming.

Q. 6. What sort of public safety information has been broadcast by WAEM?

A. 6. Attached as Exhibit 3, is the Declaration of Mayco Villafaña, detailing the efforts made to prepare and present public safety information over Station WAEM. The scripts for the public safety announcements are attached hereto as Exhibit 4. You will note in the Declaration of Mr. Villafaña, that the ultimate programming goal for Station WAEM is to have programs produced by the Greater Miami Convention and Visitors Bureau guide visitors safely to their destinations

throughout Dade County, and to have programs produced by the Department of Aviation of Metropolitan Dade County guide visitors safely on their return trip to the airport.

Q. 7. Has the public safety information effectively reached its target audience and, if so, upon what evidence does Florida base this determination?

A. 7. As explained in the Declaration of Mayco Villafaña, it is too early to know if the public safety information on Station WAEM is reaching its target audiences. The Greater Miami Convention and Visitors Bureau will be using the services of a commercial research organization, Strategy Research Corporation, to poll visitors in different tourist areas around greater Miami, and the Beaches. It expects to develop research data on the effectiveness of the Station in that manner.

If you have any questions concerning the matters discussed above, please contact me.

Sincerely yours,

Joseph A. Belisle
Counsel for Department of Management
Services Division of Communications
State of Florida

JAB/mm

cc: Jefferson Pilot Communications Company
Wiley, Rein & Fielding

EXHIBIT 1

Declaration of Roy Pressman

My name is Roy Pressman and I am the Chief Engineer for experimental FM Station WAEM, Miami, Florida.

Since May 20, 1994 ongoing listening tests have been conducted to determine any detrimental effects to second adjacent channel station WMXJ (102.7 MHZ), by the operation of experimental station WAEM. Listening tests were conducted in the upper floors of the Biscayne View apartment complex (where WAEM is located), and automobile tests are currently continuing in Dade, Broward and Palm Beach County. Not one listener interference complaint has been received since WAEM went on the air.

Automobile/Car radio listening tests - Three automobiles and the respective car radios are being used for the ongoing listening tests. The vehicles/radios are:

1. 1991 Ford Explorer - Utilizing a factory installed Ford AM/FM stereo radio with a vertically polarized mast type antenna.

2. 1985 BMW 325B - Utilizing a factory installed BMW radio with a vertically polarized mast type antenna.

3. 1994 Saturn SCII - Utilizing a factory installed Saturn radio.

All three vehicle radios have a preset tuned to 102.3 MHZ and a preset tuned to 102.7 MHZ. This allows almost instant tuning capability between experimental station WAEM (102.3 MHZ) and WMXJ 102.7 MHZ. The automobiles are driven throughout the city of Miami, the airport area, through Dade County and up into Broward County, noting any areas where there is interference to either station. No second-adjacent interference from WAEM or WMXJ has been heard as of this date. I personally have checked for interference in the Biscayne View apartment building, and the streets surrounding the Biscayne View apartment building. These areas are where WAEM has the greatest potential to interfere with WMXJ and no interference was heard.

Top Floors of the Biscayne View Apartment - We have been fortunate enough to be invited into several apartments on the upper floors of the Biscayne View apartment complex (the top floor of the complex is the transmitter site for WAEM). In each apartment we tuned the resident's own stereo receiver to WMXJ (102.7 MHZ) and heard no interference from WAEM (102.3 MHZ). The same was true when the receiver was tuned to WAEM (no interference was heard from WMXJ).

I declare under penalty of perjury the facts stated above are true.

EXHIBIT 2

A REPORT DOCUMENTING THE RESULTS OF FIELD INTENSITY MEASUREMENTS CONDUCTED IN THE MIAMI METROPOLITAN URBAN AREA ON COMMERCIAL FM STATION WMXJ AND EXPERIMENTAL FM STATION WAEM

February 21, 1995

W. J. Kessler
02/21/95

KESSLER AND GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS
KGA
507 N.W. 60th Street, Suite C
Gainesville, Florida 32607

TABLE OF CONTENTS

SECTION 1

BACKGROUND

An FM Broadcast Station Permit dated May 18, 1993 was issued to the State of Florida Department of Management Services, Division of Communications by the Federal Communications Commission. The FCC Permit File No. is: BPEX-930513MA. The original assigned call sign was: 930513MA. On May 05, 1994, the Commission re-issued the authorization to reflect a call sign change to WAEM. Upon completion of construction, the State of Florida filed license application BLEX-940331KA with a request for Program Test Authority (PTA). Florida's PTA request was granted on May 20, 1994.

The applicant's (Florida) stated purpose of the subject experimental FM station is to provide an opportunity to investigate second-adjacent channel receiver selectivity of typical FM radio receivers in a high-rise urban environment such as metropolitan Miami, Florida while also providing a vehicle for communicating public safety information to visitors to the Miami area.

The Construction Permit granted by the FCC on May 18, 1993 authorized construction of the experimental FM station in

accordance with the following operating parameters:

TRANSMITTER LOCATION:	915 NW 1st Ave., Miami, Dade County, FL
GEOGRAPHICAL COORDINATES:	N. LAT: 25° 46' 58"
	W. LON: 80° 11' 45"
ANTENNA TYPE:	NON-DIRECTIONAL
POLARIZATION:	VERTICAL ONLY
EFFECTIVE RADIATED POWER IN THE HORIZONTAL PLANE (KW):	0.025
HEIGHT OF RADIATION CENTER ABOVE GROUND (METERS):	97
HEIGHT OF RADIATION CENTER ABOVE MEAN SEA LEVEL (METERS):	100
HEIGHT OF RADIATION CENTER ABOVE AVE. TERRAIN (METERS):	100
FREQUENCY OF OPERATION (MHz):	102.3

One of the important special operating conditions imposed by the Construction Permit is stated in paragraph 5) beginning at the bottom of page 3 of the Construction Permit:

> "5) The permittee shall submit a report to the Commission no later than one year from the date of the grant of this authority detailing:
>
> a) The methodology employed and results obtained from a study to be conducted by the permittee to determine (i) the accuracy of propagation models used to predict the extent of service and interference contours; (ii) the effect of high-rise urban environment on signal polarization; (iii) the susceptibility of typical home and car receivers to interference from second-adjacent channel service; (iv) the effects, if any, of the experimental operation on station WMXJ (FM), Pompano Beach, FL; and (v) the effects, if any, of WMXJ (FM) on the experimental operation;
>
> b) Any other information requested by the Commission or considered pertinent by the permittee."

In a letter from the Commission dated January 27, 1995 signed by Mr. Larry D. Eads, Chief, Audio Services Division of the Mass Media Bureau, the permittee was notified that the required engineering data was overdue and that the Commission was

requesting a progress report due within 30 days of the letter date "detailing what research has been conducted thus far as well as information regarding the effectiveness of the public safety information program[1]".

In a footnote on page 3 of this letter the Commission states: "It is not intended that the report requested herein be the complete and final report required by the Construction Permit. Rather, it is intended to be a progress report detailing what steps have been taken as of this date to fulfill WAEM's stated purpose."

Therefore, in accordance with the foregoing directive, this report responds to items 2, 3, and 4 on page 3 of the Commission's letter dated January 27, 1995.

As a progress report intended to respond to the Commissions immediate request for certain engineering data, this document deals with the following topics:

1. The methodology employed to conduct the field intensity measurements.

2. Vertical polarization field intensity measurements conducted along the 225°, 270°, 315° and 360° radials to permit the identification of the WAEM 60 dbu contour over the major land mass generally west of the WAEM transmitter site located near the eastern shore line of the City of Miami to verify the accuracy of the propagation models used to predict the 60 dbu service contour.

3. Horizontal polarization field intensity measurements at the same locations where the vertical polarization measurements were made to determine the influence of the high-rise urban environment on signal polarization.

4. Vertical polarization field intensity measurements on WMXJ(FM) at the same location on each radial where the WAEM(FM) vertical polarization field intensity measurements were made to establish the U/D signal strength ratios at each measurement location.

5. Observe the reception of WMXJ(FM) on 102.7 mHZ and WAEM(FM) on 102.3 mHZ at each measurement location on an automobile radio and a portable radio at each measurement site to observe the extent of the interference, if any, caused by of WAEM(FM) to WMXJ(FM) and vice versa.

SECTION 2

FIELD INTENSITY MEASUREMENT METHODOLOGY

The field intensity measurements were made using the "cluster technique". At each measurement location along a selected radial from the WAEM(FM) transmitter site, a group of 12 or more measurements were made within a circular area of a radius of approximately twenty-five feet of the field intensity meter. The multiple measurements were then processed to determine the median measured field intensity. The median signal strength determined in this manner is considered to be the 50 percentile as well as the most likely correct value among the multiple measured values which are influenced by numerous site conditions such as nearby trees, fences, structures, power lines, etc.

The field intensity measurements were made with the following equipment:

1. A Potomac Instruments TYPE FIM-71, Serial No. 846 Field Intensity Meter.
2. The standard calibrated dipole antenna supplied with the FIM-71.
3. A ten meter length of 50-ohm calibrated coaxial transmission line to interconnect the calibrated antenna and field intensity meter.

All field intensity measurements were made with the radiation center of the calibrated dipole antenna at the seven-foot level above the ground surface. The vertical polarization measurements were made with the calibrated dipole oriented vertically and supported by a non-conducting mast to avoid interference with the lower half of the dipole antenna. The coaxial transmission line

connected to the balun at the center of the calibrated dipole was brought out horizontally from the vertical dipole a distance of one meter ($\lambda/3$) to minimize the influence of the transmission line on the lower half of the dipole antenna.

The horizontal polarization measurements were made with the calibrated dipole oriented in the horizontal position and supported at the seven-foot level with the non-conducting support.

The signal strength measurements made with the Potomac Instruments FIM-71 and associated dipole antenna at the seven-foot level were converted to field intensity in microvolts per meter at the 7-foot level by applying the calibrated antenna conversion factor of 2.5 for a frequency of 102.5 mHZ (the average of 102.3 and 102.7 mHZ) as given by curve B (7-foot elevation) in FIGURE 3-2 of the Potomac Instruments FIM-71 Operating Manual. The 7-foot field intensity measurements obtained in this manner were then converted to the 30-foot level by applying the linear height-gain factor of 4.29 (12.64 db) as is customary for flat terrain which is characteristic of the Miami area. The equivalent 30-foot field intensities were then converted to dbu values. The measured field intensities in dbu were then plotted as a function of distance on linear coordinate paper to establish the distance to the measured 60 dbu locations on each of the four radials.

It is recognized that the Commission prefers that field intensity measurements be conducted with the calibrated antenna at the 30-foot level to avoid the application of the 7-foot to 30-foot height gain factor. The seven-foot elevation was used because the antenna factors given in FIGURE 3-2 of the Potomac Instrument FIM-71 operating manual are for two elevations only: 7-foot and 30-foot. The 7-foot level was selected because it was not practical to use 30-foot antenna elevations in the highly congested Miami

urban area. A copy of the antenna factor curve given as FIGURE 3-2 in the Potomac Instrument Type FIM-71 operating manual is included in this report as FIGURE 1.

An important aspect of the measurement program described in this progress report is the measurement of the WAEM(FM) and the WMXJ(FM) undesired-to-desired (U/D) signal intensity ratio. The U/D ratio obtained at the 7-foot level should be as accurate as a direct measurement at the 30-foot level.

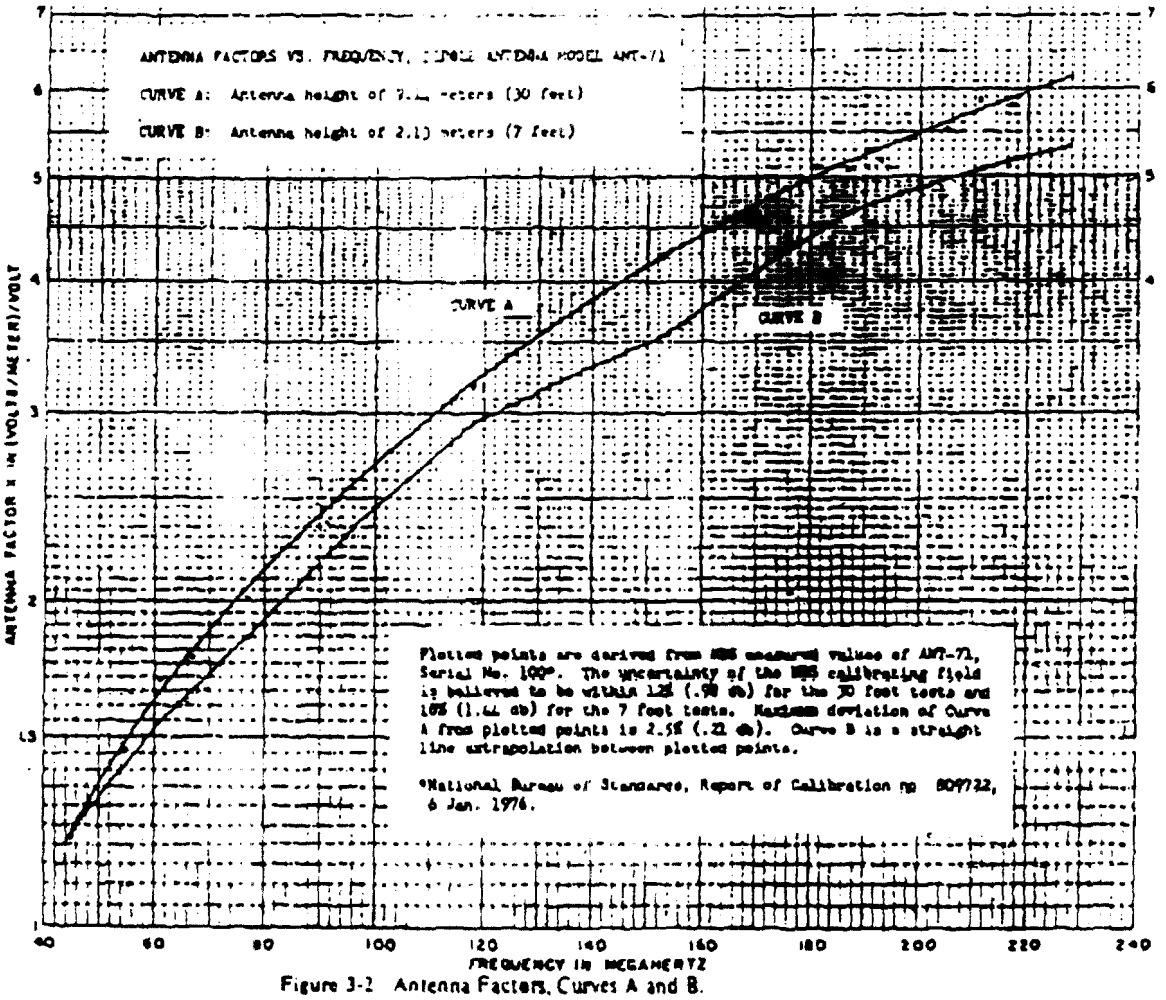

Figure 3-2 Antenna Factors, Curves A and B.

REPRODUCED FROM P.I. FIM-71 INSTRUCTION MANUAL

KESSLER AND GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS
537 N.W. 60TH STREET SUITE C
GAINESVILLE FLORIDA 32607

FIGURE 1

SECTION 3

WAEM(FM) AND WMXJ(FM) FIELD INTENSITY MEASUREMENTS

All field intensity measurements were made along the 225°, 270°, 315° and 360° radials emanating from the transmitter site located at 915 NW First Street in Miami, Florida. This location is close to the eastern boundary of the City of Miami. Consequently, no measurements were made along the northeast, east, and southeast radials which cross Biscayne Bay between Miami and Miami Beach. All of the measurements were made over the period from February 14 through February 17, 1995.

The prevailing weather throughout the four-day measurement period was typical balmy Miami weather with the temperature in the 80's, scattered clouds and no rain.

The measurement locations along the 225°, 270°, 315° and 360° radials are shown in FIGURE 2. Field intensity measurements were attempted at numerous additional locations on each of the four radials. Many of these potential measurement locations turned out to be unusable because the relatively weak signals of WAEM(FM) could not be resolved by the field intensity meter in the presence of the stronger WMXJ(FM). Consequently, although five good measurement locations were available on the 225° radial and four good measurements on the 270° and 315° radials, only three good measurement locations were available on the 360° radial. At each measurement location an average of a dozen cluster measurements were made. Two sets of cluster measurements were made on WAEM(FM), a set of vertical polarization measurements and another set of horizontal polarization measurements. At some of the measurement locations, the horizontal components of the WAEM(FM) field intensity could not be measured accurately because the

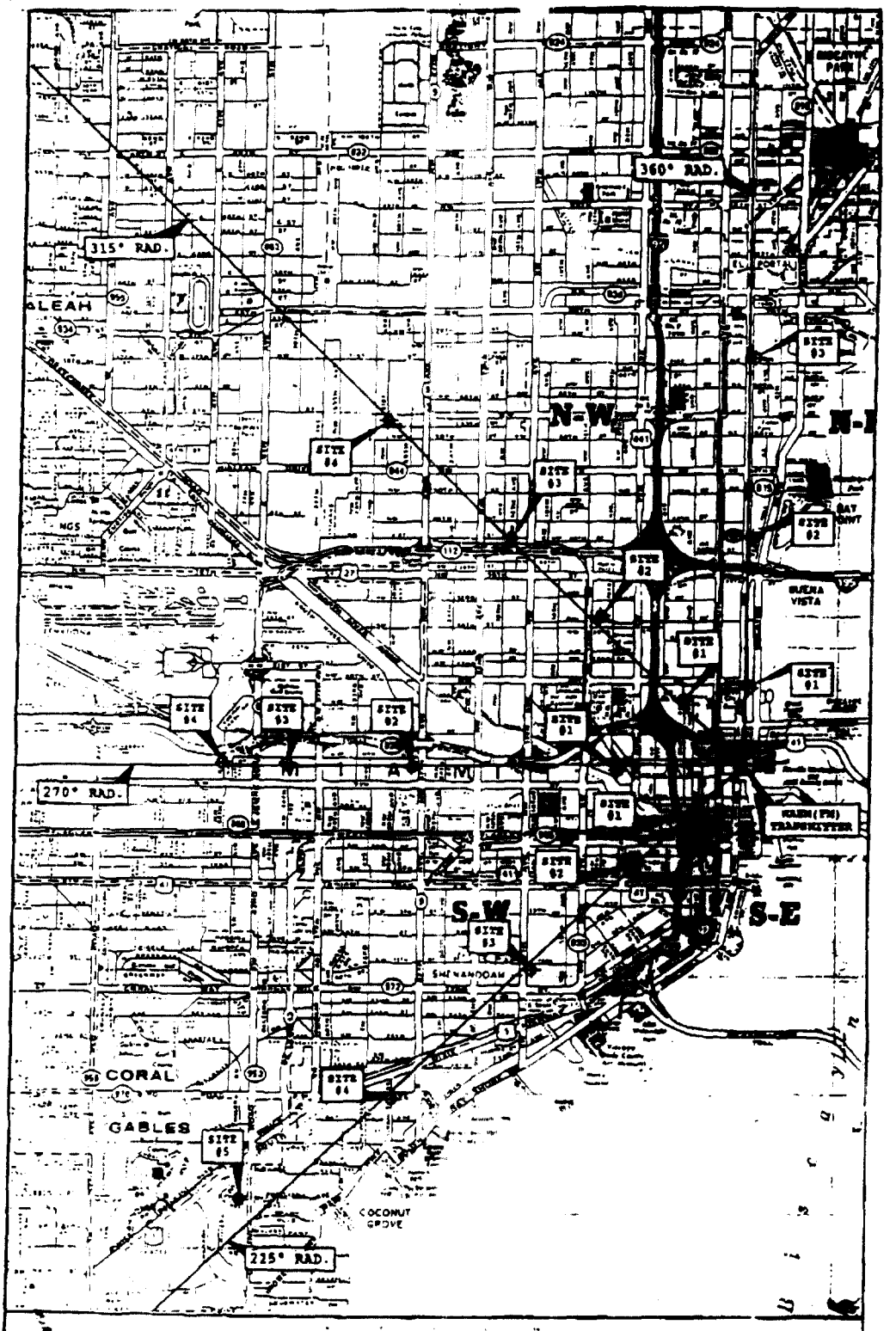

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FIGURE 2

horizontal component was sufficiently weak to be masked by side-band splatter from WMXJ(FM) and/or other powerful local FM stations.

A set of cluster measurements of the vertically polarized component of WMXJ(FM) was also made at each measurement location on each of the four radials to establish the U/D ratio of the WAEM(FM) and the WMXJ(FM) stations.

Therefore, with 17 measurement locations along the four radials, a total of approximately 600 field intensity measurements were made.

The results of all the measurements for both WAEM(FM) and WMXJ(FM) after converting the signal strength readings from the Potomac Instruments FIM-71 to decibels above one microvolt for the 30-foot elevation (dbu/30') are summarized in FIGURES 3 through 6. These figures also show the measured vertically polarized component of the WMXJ(FM) transmitter to permit determination of the measured WAEM(FM)/WMXJ(FM) U/D ratio.

A set of curves depicting the variation of field intensity in dbu as a function of distance for each of the four radials are shown in FIGURE 7 through 10. The intersection of the best-fit curves with the 60 dbu field intensity identified the distance in kilometers to the measured 60 dbu location for each radial. In order to identify the distance to the 60 dbu field intensity on the 360° and 315° radials, it was necessary to extrapolate the curves slightly since reliable measurements at distances beyond about eight (8) kilometers were not possible with the limited frequency selectivity of the Potomac Instrument FIM-71 Field Intensity Meter.